1.0 PURPOSE

To minimize the risk of health care workers or the patients they serve of acquiring or transmitting a vaccine preventable infection in the health care setting, thus providing a safer work and care environment.

2.0 POLICY

All health care workers will be free of and protected from those vaccine preventable diseases they may acquire or transmit in the performance of their duties at Cincinnati Children's Hospital Medical Center (CCHMC).

3.0 DEFINITIONS

3.1 Health care workers include physicians, nurses, emergency medical personnel, medical and nursing students, dental professionals and students, allied health professionals and students, clinical laboratory personnel, health unit coordinators (HUCs) and support staff, child life professionals, hospital volunteers, food service personnel, and environmental service personnel.

3.2 Immunization requirements are defined by the following general risk groups and additional job specific risks.

3.2.1 Direct care providers (D) whose routine tasks include procedures involving potential exposure to patients' skin, eyes, mucous membranes, blood or other potentially infectious body fluids, including bite exposures; e.g., resident physicians, surgeons, dentists, pathologists, endoscopists, nurses, clinical lab technicians, paramedics, psychiatrists and psychologists, physical therapists, patient care assistants, respiratory therapists and environmental services personnel who handle biohazard waste.

3.2.2 Indirect care providers (I) whose jobs do not routinely involve exposure to patients' skin, eyes, mucous membranes, blood or other potentially infectious body fluids, but which may occasionally require performing a direct care activity, and those whose jobs place them routinely in the direct care environment; e.g., transporters, HUCs, health and safety personnel.

3.2.3 Non-care providers (N) whose jobs routinely require no greater potential exposure than a visitor and for which D and I activities can be declined, e.g., secretaries, administrative staff, and interpreters.

3.3 Immunity to a specific agent will be defined by certified record of immunization or serologic testing for all individuals hired after the effective date of this policy. For individuals hired before January 1, 2006, "immunity" based on birth before 1957 or physician documented measles will not be considered as evidence of measles immunity in the event of an outbreak or direct exposure.

3.4 Immunocompromised individuals include persons with congenital or acquired immunodeficiency disorders, including HIV infection; leukemia, blood dyscrasia, lymphoma, or any other neoplasms affecting the bone marrow or lymphatic system; recipients of solid organ and bone marrow transplants; persons on immunosuppressive therapy (e.g., ≥2 mg/kg/day of prednisone or 20 mg/day in the adult).

4.0 IMPLEMENTATION

4.1 Employee Health Screening and Procedures

4.1.1 Screening for job appropriate immunization history/immunity will occur at the time of hire or entry into the Medical Center work/volunteer force. It will be the responsibility of the individual to follow-up with Employee Health prior to the end of the 90-day probationary period to verify compliance with appropriate immunization requirements. A verification of health compliance must be included with the 90-day evaluation for processing through Human Resources. Medical exemptions from immunizations must be approved by the Infection Control Officer or designee.

4.1.2 Employee Health will maintain vaccine information statements, consent forms for administration and declination forms (for medically exempt individuals). These will be updated as needed to be concordant with the appropriate ACIP guidelines.

4.1.3 Annual follow up of immunization status will take place for all health care workers as a part of an annual Employee Health QA initiative. This opportunity will be used to identify missed transfers or others whose immunization requirements may have changed or previously been deferred.

4.1.4 Employees who fail to comply with immunization requirements may be dismissed. Non-employees who fail to comply with CCHMC standards will be excluded from CCHMC activities.

4.2 The Infection Control Program and Employee Health will develop immunization standards for health care workers and other individuals who perform duties within the Medical Center.

4.2.1 Health care workers will be expected to meet and maintain job category specific standards. New hires must be in full compliance with CCHMC standards for immunization within 90 days of hire to avoid disciplinary action.

4.2.2 Employees may be exempt from required immunizations if a statement of medical contraindication is provided by their private physician or Employee Health and approved by the Infection Control Officer.

- Employee Health will maintain a record of all health care workers who have been exempted from the standard because of an underlying health condition or other contraindication.
- Exempt health care workers will be reviewed annually to determine if the exemption is still applicable. If not, the health care worker must meet the job category specific standard.

4.2.3 Employees will be expected to comply with the immunity requirements appropriate for their risk category/group. (Measles "immunity" defined by birth before 1957 or "physician diagnosis" will apply only to individuals hired before January 1, 2006. (See definition 3 above.)

4.2.4 Employees who change job categories must meet the category specific requirements for their new category.

4.2.5 A written declination must be filed with Employee Health by the employee who is exempted from a required immunization (see b. above) or refuse a recommended immunization. See Employee Health for individual Declination Statements: Hepatitis B, Varicella, Measles, Neisseria meningitidis, Rabies, and Influenza. Non-immune employees may be furloughed without pay if they become exposed to one of the covered vaccine preventable diseases, are potentially incubating one of these diseases, and cannot be reassigned.

4.3 Determination of immune status, as defined by the standards, will be made by Employee Health.

4.3.1 Immunization records and/or serologic testing will be used to determine immune status.

4.3.2 Results of any serological testing performed through Employee Health will be shared with the health care worker and will become part of their official health record.

4.3.3 Employee Health will maintain records of the immune status for each health care worker.

4.4 Non-employees will be expected to meet the same job category specific standards as CCHMC employees.

4.4.1 Any immunizations that are required will be the responsibility of the individual or their sponsoring institution.

4.4.2 CCHMC identification badges will not be issued until compliance with the appropriate standard has been reviewed and documented through Employee Health/designee. Employee Health will act as advisors for compliance with these requirements under the direction of the Infection Control Officer and maintain the medical records submitted in the Employee Health Department.

4.4.3 Non-employees with limited exposures to staff and/or patients will be risk stratified by Employee Health for immunization requirements. See Employee Health for the CCHMC Health Screening form, and for the Non CCHMC Minimal Health Requirements.

4.5 Vaccine Administration Guidelines: All vaccines will be administered in accordance with the latest Advisory Committee on Immunization Practices of the CDC (ACIP) guidelines. CLICK HERE FOR CURRENT ACIP RECOMMENDATIONS: http://www.cdc.gov/vaccines/hcp/acip-recs/index.html

4.6 Employee Health/designee will obtain written consent prior to vaccination.

4.6.1 Vaccinees will be provided a written summary of the indications and contraindications for the vaccine(s) to be administered. This will include the Vaccine Information Statement (VIS).

4.6.2 Employee Health will maintain a record of all immunizations administered by Employee Health/designee and include the vaccine manufacturer, lot number, site of administration, and date of administration.

4.7 Job category specific immunity rationale. (See table)

Job Category Specific Immunity Rationale

Agent	Job categories for which immunity is indicated	Rationale
Measles	Required for all.	Disease is highly communicable by airborne route; single case may herald outbreak among susceptibles.
Mumps	Required for all.	Disease may go unrecognized; transmission possible in health care setting; increasing number of cases are in young adults with absent or waning immunity.
Rubella	Required for all.	Disease may go unrecognized; immunization interrupts inadvertent transmission to pregnant women, thereby preventing congenital rubella syndrome.
Varicella	Required for all.	Disease highly communicable; significant risk of morbidity in adults; immunization interrupts transmission or lessens severity of infection.
Hepatitis A	Recommended for all employees. Required for daycare workers and food service workers.	Recognized food-borne pathogen; usually asymptomatic in young children who are point sources in daycare outbreaks.
Hepatitis B	Required for all.	Principal route of transmission is through contact with infected blood or body fluids; immunization interrupts transmission following inadvertent or accidental exposure.
Neisserria meningitidis (conjugate vaccine)	Recommended for individuals with asplenia or complement deficiencies and microbiologists who are routinely exposed to isolates of N. meningitides.	Principal route of transmission is through respiratory contact with infectious droplets; significant numbers of organisms may be aerosolized during diagnostic evaluation of live cultures.
Tetanus	Required for plant engineering, maintenance, and veterinary service personnel; strongly recommended for researchers working with animals.	Routine boosters (every 10 years) required to maintain immunity; tetanus prone injuries may occur in the workplace. Tdap is the preferred vaccine unless previously administered or otherwise contraindicated.
Pertussis	Strongly recommended for all, routinely administered to all new employees. Required for new volunteers, childcare workers, pediatric housestaff, and any individuals identified at risk during a post exposure evaluation.	Immunity wanes following childhood immunization and/or natural infection; inadvertent exposures may occur in inpatient, ED and primary care settings. Tdap will be routinely administered to all incoming pediatric housestaff unless otherwise contraindicated.
Poliovirus	Recommended for all.	Wild type poliovirus infection may occur in patients arriving from endemic areas outside the US; immunization interrupts spread.
Influenza	Required for all.	Risk of exposure and secondary transmission is high in the health care setting; significant risk of adverse outcomes in immunocompromised individuals and older adults who are not vaccinated.
COVID-19	Required for all.	Risk of transmission is high. Will be administered per CDC recommendations and HR policies.
Vaccinia	Recommended for laboratory persons working with vaccinia virus or vaccinia vectors.	Virus is extremely hardy; risk of exposure significant when handling virus in the research lab or caring for inoculated humans or animals.

4.8 Overview of immunization strategy. Individuals may be immunized utilizing the following approach in accordance with the recommendations outlined in the above-cited ACIP guidelines.

4.8.1 Vaccines will not be administered to those individuals with vaccine-specific contraindications covered in the ACIP guidelines.

4.8.2 The vaccine-specific contraindications are included on the written consent form which is to be completed prior to each individual vaccine administered by Employee Health/designee.

4.8.3 Vaccines administered through Employee Health will be at no charge to the employee.

4.8.4 Any employee who wishes to be vaccinated by his/her personal physician may do so at his/her own expense and furnish documentation to Employee Health.

Disease	**Consider immune if…**	**If not immune, and not contraindicated, give…**
Measles	• Positive serology • 2 Measles containing vaccine doses at least 28 days apart given after 12 months of age with at least 1 dose after 1980 • Individuals hired before January 1, 2006 who were previously considered "immune" based on birth date before 1957 or because of "physician diagnosed measles" should have serologic confirmation of immunity or receive MMR as part of a pro-active prevention strategy. In the event of an exposure or community outbreak, these will be REQUIRED.	1 dose MMR if previous History of 1 dose Measles-containing vaccine. 2 doses MMR, 1 month apart if no previous Measles-containing vaccine.
Mumps	• Positive serology • 2 Mumps containing vaccine after 12 months of age at least 28 days apart • Individuals hired before January 1, 2006 who were previously considered "immune" based on physician diagnosis should have serologic confirmation of immunity or be immunized with a single MMR. In the event of a community outbreak, serologic confirmation or a second immunization will be REQUIRED.	2 doses MMR.
Rubella	• Positive serology • 1 Rubella containing vaccine after 12 mo of age	At least 1 dose MMR.
Varicella	• History of varicella or zoster confirmed by healthcare provider. • Positive serology • 2 doses of VZV vax 6-8 wks apart	2 doses VZV vax, 6-8 weeks apart. Post vaccination serology may be indicated following VZV exposure of vaccine recipients.
Hepatitis A	• History of previous documented hepatitis A infection • Previous hepatitis A vaccine series • Positive serology	2 doses HAV vax, 6-12 months apart.
Hepatitis B	• History previous documented hepatitis B infection • Previous hepatitis B vaccine series with sero-conversion • Positive serology	3 doses HBV vax at 0, 1, and 6 months; Post titer at 8 months (1-2 months post 3rd HBV immunization). Considered immune if anti-HBS ≥10 mIU/mL

		Sero-negative persons re-vaccinated followed by post titer. No further vaccine required in continued sero-negative persons, but considered and managed as non-immune if exposed. See 4.10 for further details.
Neisseria meningitides	• Previous vaccination with a meningococcal vaccine within 5 years.	1-2 doses MenACWYfor adults with asplenia or persistent complement component deficiencies or travelers to endemic areas. 1 dose MCV4 for clinical microbiologists; booster every 5 years. 2-3 doses of MenB vaccine for adults with asplenia or persistent complement component deficiencies and clinical microbiologists; booster 1 year after completion and every 2-3 years thereafter
Tetanus (and diphtheria)	• Previous primary series of tetanus toxoid containing vaccine and boosters every 10 years	If no previous vax – 2 doses Td vax 6-8 weeks apart; 3rd dose 6 months after 2nd; Td booster every 10 years following the primary series. Tdap may be substituted for ONE of the first 3 vaccine doses in the series.
Pertussis	• Previous receipt of 1 dose of Tdap ≥ 11 years of age.	1 dose Tdap, regardless of interval since most recent Tdap; may be administered after the 20th week of gestation in pregnancy.
Polio	• Previous OPV or IPV vaccine series	Will not be provided by Employee Health.
Vaccinia	• Previous vaccine within 10 years	1 dose given percutaneous with a bifurcated needle; boosters indicated every 10 years with continued exposure.
Rabies	• Previous rabies vaccine series	Pre-exposure immunization with 3 doses of vax given on days 0, 7, and 21 or 28; titers checked every 2 years; boosters given as needed to maintain RFFIT titers ≥ 1:5.

4.9 Exposure Considerations

4.9.1 Any non-immune health care worker, who has a significant exposure to measles, mumps, varicella or pertussis may be excluded from the Medical Center during the incubation period for that infection unless a suitable alternative assignment is available. Furloughed employees may be required to use PTO unless medically exempt from required or strongly recommended immunizations. For the purpose of this policy, the following incubation periods will apply:

- Measles: days 7-18 post exposure
- Mumps: days 14-25 post exposure
- Varicella: days 8-21 post exposure
- Pertussis: days 6-21 post exposure

4.9.2 Health care workers who receive varicella vaccine as adults will not be routinely tested for sero-conversion. However, those who have a significant exposure to varicella, will have serological testing for varicella antibody 4-6 days after exposure to document immunity (and to allow time for an amnestic response). Personnel who do not have detectable antibody will be furloughed or re-assigned as indicated in 1. above.

4.9.3 VZV vaccine recipients who develop a varicella-like rash within 6 weeks of immunization must contact Employee Health for management and possible evaluation.

- Vaccine recipients who develop a varicella-like rash limited to the injection site (i.e., can be

completely covered by a dressing and clothing) will be permitted to work, providing no inpatients or high-risk outpatients will be exposed. Furlough may be required if reassignment is not available.

- Those with a generalized varicella-like rash may not work since vaccine strain virus lesions cannot be distinguished from wild-type virus infection.
- In the event of work reassignment or furlough, return to routine work assignment must be cleared by Employee Health or Infection Control.

4.9.4 Recipients of vaccinia (smallpox) vaccine are excluded from any/all patient care activities until the vaccination site is completely healed.

4.9.5 Health care workers who have an unprotected exposure to pertussis will be furloughed if they become symptomatic during the incubation period. Diagnostic testing of symptomatic individuals may be done.

4.10 Management of Non-Responders to Hepatitis B Vaccine

4.10.1 A vaccine recipient who does not develop a serum anti-HBs response after primary vaccine series should be tested for HBsg to rule out chronic Hepatitis B infection

4.10.2 If HBsAg testing is negative, a single dose of Hep B vaccine can be administered followed by testing for anti-HBs in 1-2 months.

- If anti-HBs is ≥10 mIU/mL, no further evaluation or vaccination is required.
- If anti-HBs is <10 mIU/Ml and the employee is non-clinical, the employee can choose to proceed with completing the vaccine series or not
- If anti-HBs is <10 mIU/Ml and the employee is clinical, the employee will receive additional doses (1-2 depending on vaccine used) to complete a second vaccine series.
- NOTE: If desired, an employee can choose to complete the entire vaccine series (3 doses of Energix-B or Recombivax HB; 2 doses of Heplisav-B)
- After vaccine series is completed, obtain anti-HBSS testing 1-2 months after last dose

4.10.3 If employee has received ≥2 complete series of HepB vaccine (up to 6 doses), she/he/they is considered a vaccine non-responder. Potential exposure to Hepatitis B should be managed as if the individual is non-immune.

5.0 OVERSIGHT

The Infection Prevention & Control Program will periodically review and update this policy as appropriate. Policies will be reviewed at least every three (3) years. Questions regarding this policy shall be directed to, and authority over this policy shall vest with, the Infection Prevention & Control Officer.

6.0 REFERENCES

6.1 Immunizations of Health Care Personnel: Recommendations of the Advisory Committee on Immunization Practices (ACIP). Morbidity and Mortality Weekly Report (MMWR). November 25, 2011/60(RR07);1-45.

6.2 APIC Text of Infection Control and Epidemiology. 4th Edition.

6.3 David W. Kimberlin, MD, FAAP, Michael T. Brady, MD, FAAP; Mary Anne Jackson, MD, FAAP; Sarah S. Long, MD, FAAP. Red Book 2021. Committee on Infectious Diseases; American Academy of Pediatrics.

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